



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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SEP 12 2012

Sent via UPS

Mr. David Keith
Project Coordinator
Anchor QEA, LLC
614 Magnolia Avenue
Ocean Springs, MS 39654

RE: Draft Final Chemical Fate and Transport Modeling Study
San Jacinto River Waste Pits Superfund Site, Harris County, Texas
Unilateral Administrative Order, CERCLA Docket No. 06-03-10

Dear Mr. Keith:

The U.S. Environmental Protection Agency (EPA) and other agencies have completed their reviews of the above referenced document dated July 2012. The EPA approves this document with the following modifications:

1. **Section 3.1, p. 14):** The reach of the San Jacinto River between the Lake Houston dam and Grennel Slough is given as 19 miles. It appears that this distance is actually about 13 miles. This distance shall be confirmed and corrected as necessary.
2. **(Section 3.2, p. 15):** References shall be provided for the following bullets: LiDAR upland topographic contours collected by Merrick & Co. and published in November 2008; National Oceanic Atmospheric Administration (NOAA) Ocean Service (NOS) hydrographic survey data collected between 1979 and 1997; and USGS digital elevation model (DEM) information with 33 feet (10 meters) horizontal grid resolution.
3. **(Section 3.3.1, p. 16):** The report shall clarify that freshwater flows into the San Jacinto River through an overflow spillway, two tainter gates, and two flashboards at the Lake Houston Dam; also that flow rates for model input from 2007 through 2011 were obtained from data provided by the Coastal Water Authority (CWA); and that the flow rate between 1997 and 2006 assumed that the two tainter gates were fully opened, although data on tainter gate openings were not available. In addition, the report shall include a discussion on the uncertainty of the flow rates.
4. **(Section 4.2.2, p. 34):** It is not clear why representing the Houston Ship Channel bottom as a hard bottom is justified based on "sufficient data available to specify water column chemical concentrations." The report shall clarify this.
5. **(Section 4.3, p. 43):** The report discusses that the net sedimentation rates are predicted with reasonable accuracy. However, the modeled net sedimentation rates within the Preliminary Site Boundary are significantly lower than the empirical sedimentation rates determined from the radioisotope cores. The report shall discuss the variability of the radioisotope core

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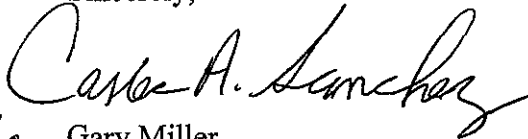
data, consider if re-assessment of the core results is appropriate, and note that some level of uncertainty exists in the predicted net sedimentation. The discussion of the effect of spatial scale on model results in the second paragraph in Section 4.5 does not change this comment.

6. **(Section 4.3, p. 45):** The report shall provide a reference for the statement “the range of trapping efficiencies expected for this type of estuarine system (i.e., 10% to 30% trapping efficiency).”
7. **(Section 4.4.2, p. 51):** The report addresses the uncertainty associated with using the Morgan’s Point water surface elevation (WSE) as a downstream boundary condition for the model by conducting a sensitivity study based on a high flow event in 2002. However, this flow event was less than the high flow event that occurred in June of 2001, which also shows a greater separation between the Lynchburg and Morgan’s Point WSE than did the 2002 event modeled. The use of the model for predicting the effects of storm events cannot be afforded high reliability based on this sensitivity study. Additional sensitivity run(s) shall be conducted as a part of the Feasibility Study using the high flow data from 2001, or an alternative approach may be proposed, such as the use of record extension software. Also as a part of the Feasibility Study, the assessment of the alternatives shall include figures showing the net erosion and net deposition within the model domain for specific return event simulations (e.g., 5-year, 10-year, 20-year, etc.).
8. **(Section 5.3.2.1.2, p. 87):** The reference to “Figures 5-23a and 5-23c” shall be changed to “Figures 5-23a, 5-23b and 5-23c”.
9. **(Section 5.3.3.2.1, p. 93):** The discussion of sensitivity analyses results along the San Jacinto River does not seem to take into account the hard bottom assumed for this river between the Lake Houston dam and Grennel Slough. For example, in the second paragraph of this section it states “due to flux from sediments [porewater diffusion and erosion]”. These processes do not occur with a hard bottom. The appropriate portions of Section 5.3.3 shall be rewritten to account for the fact that, for example, porewater diffusion, sediment bed mixing and erosion do not occur in the hard bottom reach.
10. **(Figures 4-23, 4-26, and 4-27):** The figures show schematically model average sediment mass transport results on a model-area-wide basis. However, remedial alternatives will focus on specific highly contaminated areas. Sediment mass transport within and adjacent to the EPA Preliminary Perimeter shall also be shown schematically.
11. **(Figure 4-43):** Three new colors shall be added to the scale that shows the percent decrease in water depth as follows: “-35% to -50%”; “-50% to -75%”; and “-75% to -100%”. In addition, a new figure shall be added that is similar to Figure 4-43 that shows the ranges of “Increase in Water Depth”; showing the areas of net erosion with a single color (grey in Figure 4-43) is not sufficient.
12. **(Figures 5-29a; 5-29b and 5-31):** The upper legend box indicates that a blue line represents the model (average), while the lower legend indicates that a blue line represents higher values. Which one is correct? This inconsistency shall be corrected in these figures.

13. **(Figures 5-33a and 5-33b):** The upper legend box indicates that a blue line represents the model (average), while the lower legend indicates that a blue line represents base case x10 values. Which one is correct? This inconsistency shall be corrected in these figures.

Please provide copies of the final document to the distribution list. Please contact me at (214) 665-8318, or by email at miller.garyg@epa.gov if there are any questions or comments.

Sincerely,


for Gary Miller
Remedial Project Manager

cc: Luda Voskov (TCEQ)
Bob Allen (Harris County)
Linda Henry (Port of Houston)
Jessica White (NOAA)